

# Temperature and endothermic reaction



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Thermochemistry is the study of heat evolved and absorbed during the chemical reactions. The system is the interest of the universe; the surroundings are the rest of the universe in which the exchange of the energy with the system takes place. Both, the system and the surroundings make up the universe. Heat flow is the transfer of heat from a warm place to a cooler one. System to surroundings: Surroundings to system: An endothermic reaction is one in which heat flows from the system to the surrounding, which is the process of absorbing heat.

Heat flowing into a system from its surroundings is defined as positive;  $q$  has a positive value. An exothermic reaction is when heat flows from the surroundings into the system, which is the process of releasing heat. The heat flowing out of a system into its surroundings is defined as negative;  $q$  has a negative value because the system is losing heat. Endothermic reaction: B. Exothermic reaction: Some phase changes include melting, solidification, evaporation & condensation, sublimation and crystallization.

Melting or the fusion of ice is endothermic, the equation for the fusion of ice is or melting is  $? H_{\text{fusion}}$ . Solidification goes from a liquid state to a solid state making this an exothermic reaction. Vaporization & condensation is from a liquid to a gas causing an endothermic reaction, the equation for liquefying or steam is  $? H_{\text{vaporization}}$ . Condensation is an exothermic reaction because it goes from a gas to a solid. A state the goes from a solid to a gas is sublimation and it's an endothermic reaction. Crystallization goes from gas to solid which is the opposite of sublimation.

To conclude, thermochemistry is the study of energy that is associated with chemical reactions. Endothermic reactions are ones that absorb heat from

surroundings to system causing the system to become warmer and the surroundings cooler. Exothermic reactions releases heat from the system to the surroundings, causing the system to become cooler and the surrounding environment to become warmer.

Phase changes go from either liquid to solid or gas to solid depending on what it is, if its sublimation it goes from solid to gas. The specific heat is the quantity of heat required to raise the temperature of a substance by one degree? , the formula that follows it is  $Q = m \cdot TC_p$ .